IN THE CLAIMS:

Please amend claims as follows.

1. (currently amended)An exoskeletal system [[(1)]] providing assistance in terms of support and motor-power for at least one biological segment (S_b) of a person, where this system has:

- an exoskeletal weight-bearing structure [[(2)]] equipped with resources for adaptation [[(7)]] onto the person, and composed of a reference structure [[(3)]] and at least one mechanical segment [[(4)]] connected to the reference structure by a mechanical articulation [[(8)]],
- resources [[(11)]] for acquiring the movements of the biological segments,
- resources [[(15)]] for acquiring the spatial position of the mechanical segments [[(4)]] in relation to the reference structure [[(3)]],
- operating resources [[(19)]] providing motor-power to the articulated mechanical segments,
- and control resources [[(17)]] connected at their inputs to the movement and position acquisition resources, and at their outputs to the operating resources, in order to control them,

characterised in that:

- the said resources [[(11)]] for acquiring the movements also acquire the movement intentions, and are composed of resources for time related measurement of the effort coming from at least one biological segment and time-dependent resources for detecting the direction of the movements or movement intentions of these segments,
- the said control resources [[(17)]] include:

* control parameters applicable to the person and to the field of activities, and parameters applicable to the configuration of the exoskeleton,

* processing resources which, according to the said parameters and the information coming from the resources for acquiring movements or movement intentions, proportionately determine characteristics relating to speed, acceleration, deceleration and effort for the said operating resources[[(19)]],

* and control resources used to control the said operating resources, in accordance with characteristics of speed, acceleration, deceleration and effort determined beforehand by the said processing resources.

2. (original) An exoskeletal system according to claim 1, characterised in that the control parameters applicable to the person and to the field of activities include the biomechanical and pathological characteristics of the person, in order to determine the proportionality factors of motor-power amplification, and attenuation where appropriate, or even removal of the involuntary movements.

3. (currently amended) An exoskeletal system according to claim 1 [[or 2]], characterised in that the control parameters include coefficients for limiting the amplitude of the person's movements.

4. (currently amended) An exoskeletal system according to claim 1, characterised in that each mechanical articulation [[(8)]] connecting two mechanical segments[[(4)]] or one mechanical segment [[(4)]] in relation to the reference structure [[(3)]] includes:

- resources for the adjustment of its position in relation to the reference structure or another segment, in order to enable it to be positioned in relation to the biological articulation,

- for each mechanical articulation [[(8)]] corresponding to a biological articulation, with the exception of that of the shoulder, as many pivot links as the biological articulation has degrees of freedom,

- for the mechanical articulation [[(8)]] corresponding to the articulation of the shoulder, four degrees of freedom implemented by two pivot links and a radially-sliding pivot link [[(31)]].

5. (original) An exoskeletal system according to claim 4, characterised in that each pivot link is implemented by a shafted guidance system or by a shaftless guidance system.

6. (currently amended) An exoskeletal system according to ~~claims~~ claim 4 [[and 5]], characterised in that each articulation [[(8)]] of a mechanical segment [[(4)]] is equipped, for each degree of freedom of a biological articulation, with at least three degrees of freedom, and at least one pivot link implemented by a shaftless guidance system, while the other pivot links are each implemented by a shafted guidance system.

7. (currently amended) An exoskeletal system according to claim 6, characterised in that a shaftless guidance system [[(41)]] is implemented by at least one circular rail section providing guidance for at least one mobile slide.

8. (currently amended) An exoskeletal system according to claim 4, characterised in that the radially-sliding pivot link [[(31)]] is composed of several successive axes of rotation used to reproduce a trajectory close to that of the slide of the biological axis of rotation or of a guide equipped with a template in which the axis of the pivot link describes a trajectory similar to this slide.

9. (currently amended) An exoskeletal system according to claim 1, characterised in that the resources for acquiring the movement or the movement intentions [[(11)]] include:

- stress gauges [[(12)]] mounted in opposition on a fixed part [[(13)]] connected to the weight-bearing structure, these being driven by a mobile part [[(14)]] connected to a biological segment,
- and/or resources for measuring the neuro-muscular stimuli sent by the person to his or her muscles.

10. (currently amended) An exoskeletal system according to claim 9, characterised in that the fixed part [[(13)]] and the mobile part [[(14)]] are concentric and each composed of two half-shells articulated axially to each other to allow the radial insertion of a biological segment.

11. (currently amended) An exoskeletal system according to claim 10, characterised in that each half-shell of the mobile part [[(14)]] supports an adaptable membrane [[(85)]] designed to be in contact with the biological segment and to be adapted to the morphology of the said biological segment.

12. (currently amended) An exoskeletal system according to claim 1, characterised in that the operating resources [[(19)]] are composed of pneumatic muscles or linear pneumatic actuators.

13. (currently amended) An exoskeletal system according to claim 1, characterised in that the weight-bearing structure [[(2)]] includes adjustable end-stops for limiting the amplitude of movement of the articulated mechanical segments.

14. (currently amended) An exoskeletal system according to claim 1, characterised in that the control resources [[(17)]] include programmed resources used to control the operation of the exoskeletal weight-bearing structure in accordance with specified sequences.

15. (currently amended) An exoskeletal system according to claim 1, characterised in that the control resources [[(17)]] are connected to input-output interfaces [[(27)]] used to control and oversee, remotely in particular, the operation of the said exoskeletal system.

16. (currently amended) An exoskeletal system according to claim 1, characterised in that at least one mechanical segment [[(4)]] or indeed the reference structure [[(3)]] is fitted with mounting resources for additional structures.

17. (currently amended) An exoskeletal system according to ~~one of claims 1 to 16~~ claim 1, characterised in that it includes an energy source [[(28)]] feeding the control, acquisition and activation resources, carried by the exoskeletal weight-

bearing structure and assuming a storable form such as a battery or a fuel cell, or located close to the latter in order to supply it by means of a connection harness or by induction.

18. (currently amended) An exoskeletal system according to ~~one of claims 1 to 17~~ claim 1, characterised in that the exoskeletal weight-bearing structure (2) provides assistance to a biological segment of a limb, or the trunk or pelvis of a person.

19. (currently amended) An exoskeletal assembly with several exoskeleton systems for biological segments, according to ~~one of claims 1 to 18~~ claim 1, and assembled by their reference structure onto an exoskeleton structure for the trunk and/or the pelvis, in order to constitute a partial or complete exoskeletal structure support and motor-power for miscellaneous biological segments of a person, either partially of completely.

20. (new) An exoskeletal system according to claim 5, characterised in that each articulation of a mechanical segment is equipped, for each degree of freedom of a biological articulation, with at least three degrees of freedom, and at least one pivot link implemented by a shaftless guidance system, while the other pivot links are each implemented by a shafted guidance system.